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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,848	02/09/2004	Haixin Yang	EL0542USNA	1063

23906 7590 12/11/2008

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LEGAL PATENT RECORDS CENTER
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EXAMINER	
MCCLENDON, SANZA L	
ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
12/11/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-Legal.PRC@usa.dupont.com

Office Action Summary	Application No.	Applicant(s)	
	10/775,848	YANG, HAIXIN	
	Examiner	Art Unit	
	Sanza L. McClendon	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-8,10,11 and 13-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *19* is/are allowed.

6)☒ Claim(s) *1,3,4,8,10,11 and 13-17* is/are rejected.

7)☒ Claim(s) *5-6 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 29, 2008 has been entered.

Response to Amendment

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

3. In response to the Amendment received on September 29, 2008, the examiner has carefully considered the amendments. The examiner acknowledges the addition of claim 19.

Response to Arguments

4. Applicant's arguments filed 9/29/2008 have been fully considered but they are not fully persuasive. However, it is deemed that applicant's arguments regarding the rejection (see page 8, 2nd paragraph specifically) of claims over Lent et al (5,837,042) in view of Sasaki et al (7,217,344), Hirasa et al (2003/0166742), EP 1223201, and Grant et al (6,555,205) or Kodas et al (2003/0175411) are persuasive and are hereby withdrawn. It is deemed that the above listed combinations do not teach or render obvious the addition of a monomer that is curable thermally or by ultraviolet radiation.

5. The arguments (see page 8, 2nd paragraph specifically) regarding the rejection of claims over Hirasa et al (2003/0166742) in view of Valentini et al (2005/0020730), Shimura et al (4,942,056), EP 1223201, and Grant et al (6,555,205) or Kodas et al (2003/0175411) are convincing, thus the rejection is hereby withdrawn. It is deemed that the above listed combinations do not teach or render obvious the addition of a monomer that is curable thermally or by ultraviolet radiation.

6. However, the arguments regarding the rejection of claims over the combination of over De Voeght (7,141,104) in view of Hirasa et al (2003/0166742), Shimura et al (4,492,056), Roth et al, EP 1223201 and Grant et al (6,555,205) or Kodas et al (2003/0175411) are not persuasive. It is deemed that applicant appears to be arguing that the combination of references while some individually teaching some of the aspect of the present invention and the other references individually teach other aspects of the invention, the combination still fails to teach the instantly claimed invention because chemistry by nature is an unpredictable art and it cannot by assumed that various combinations of limitation that work in some applications will work in the present application. This is not convincing or persuasive. Applicant has not provided any reasoning why the combination would not work. All the applied references in combination teach the claimed invention. The primary reference (De Voeght) sets forth the basic composition of the instant claims with a few differences, such as particle size and a firing step. However, the differences are known and can be found in the prior art from the same field of endeavor and are pertinent to overcoming known problems in the prior art, such as jetting stability, bleeding, ink stability overtime, and adhesion, as can be seen and provided for in the secondary references. It is deemed that an ordinarily skilled artisan, at the time of invention, would have understood that the combination as found in the rejection could be combined according to known methods found in the prior art to yield predictable and possible improved results. Applicant has not provided any evidence that this is not so, i.e., why the rejection does not read on the claims as written. Please find the rejections below.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1, 4, 8, 10-11, 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Voeght (7,141,104) as evidenced by Shimura et al (4,492,056) and Roth et al (5,899,084) in view of Hirasa et al (2003/0166742) and EP 1223201.

De Voeght teaches a method of jetting a composition onto a substrate via an inkjet printing system. Said composition can be printed onto plastic substrates--see examples and column 19, lines 10. The composition is a water-based ink composition comprising 0.5 to 20% of a pigment, such as carbon black, 0.1 to 10% of a polyvinyl pyrrolidone, a monomer or an oligomer, such as trimethylolpropane triacrylate, which is UV and thermally curable, a photoinitiator, a polyacrylate resin, a humectant such as ethylene glycol and water, wherein carbon black is a conductive material as evidenced by Shimura et al--see column 4, lines 1-3 of Shimura et al. The particles sizes of the pigment as taught by De Voeght are from 0.005 microns to 15 microns, preferably from 0.005 to 5 micron, and most preferably from 0.005 to 1 micron.

De Voeght differs from the instant invention because while teaching the average particles size (D50) as instantly claimed, does not specifically teach that the overall particle size (D100) does not exceed 5 microns as found in the instant claims. However, at the time of the invention it was known, from the teaching of Hirasa et al that in inkjet ink compositions, pigment particles sizes of 5 microns helps with stability of the pigment dispersion in the ink composition, as well as, stability during jetting performance, i.e., will not clog the jetting nozzle over time. The combination of De Voeght and Hirasa et al are combinable because they are 1) from the same field of endeavor, that is the art of inkjet ink composition that are inkjet ink printable and 2) pertinent to the same problem, that is pigment dispersion stability, as well as, jetting stability of the ink composition. Therefore again the examiner reasons that it would have been obvious at the time of the invention to a skilled artisan to utilize a pigment, in an ink jet ink composition such as taught by De Voeght, not having an overall pigment particles size be larger than 5 microns, as suggest by Hirasa et al. The motivation would have been a reasonable expectation of producing an inkjet ink composition having good dispersion stability, as well as, stable jetting performance in the absence of evidence to the contrary and/or unexpected results.

Regarding the limitation of maintaining the stability for 24 hours, it is deemed that the combined teaches of De Voeght and Hirasa et al or the teachings of De Voeght alone teach stability of the ink composition during making of the ink, as well as, during printing of said ink and because one usually does not make an inkjet ink composition right before using said ink in a printer, the ink must be stable for prolonged periods of time, such as 24 hours and above. The limitation is deemed to be read in the reference. However, since the Patent office is not equipped to conduct experimentation in order to determine whether Applicant's composition differs and, if so, to what extent, from the discussed reference(s). Therefore, with the showing of the reference, the burden of establishing non-obviousness by objective evidence is shifted to the Applicants.

De Voeght differs from the instant invention because, while teaching the viscosity of the ink is adjustable to 30 mPa*s or less, preferably 20 mPa*s or less, fails to teach at what temperature the viscosity is measured. However, at the time of the invention it was/is known that viscosities from 1-25 cps at 25 °C are need to allow for use in most conventional ink jet printers, as evidenced by Roth et al. De Voeght and Roth et al, as well as Hirasa et al, are analogous art because they are from the same field of endeavor that is the art of ink jet ink compositions designed to be printed from ink jet printers. Therefore the examiner deems that one of ordinary skill in the art at the time of the invention would have found it obvious to measure the viscosity taught by De Voeght at 25 °C as suggested by Roth. The motivation would reasonable expectation of success for printing the ink of De Voeght in a conventional ink inkjet printer in the absence of evidence to the contrary and/or unexpected results.

De Voeght differs from the instant invention because De Voeght does not set forth a firing step. However, at the time of the invention, it was known that firing an ink jet ink composition once printed onto substrates, such as glass, metals, and/or ceramics, helps to set/fuse the ink to the substrate, as taught by EP 1223201. De Voeght and EP 1223201 are analogous art because they are from the same field of endeavor that is the art of ink jet ink composition to be printed via ink jet ink processes Thus, the examiner deems that one of ordinary skill in the art at the time the invention was made would have found it obvious to use a firing step as taught by EP 1223201 to fuse the ink as taught by De Voeght, to the substrate with a reasonable expectation of success in the absence of evidence to the contrary and/or unexpected results.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over De Voeght (7,141,104) as evidenced by Shimura et al (4,492,056) and Roth et al (5,899,084) in view of Hirasa et al (2003/0166742) and EP 1223201 as applied to claims 1, 4, 8, 10-11, 13-17 above, and further in view of Grant et al (6,555,205) or Kodas et al (2003/0175411).

De Voeght which is described in the above rejection differs from the claimed invention since De Voeght does not expressly teach treating the substrate to change its surface tension. However, it is known that pretreating substrates with surfactants/wetting agents will lower the surface tension, which in ink jetted composition reduces the spreading of the composition (bleeding of the ink), as well as, enhancing the adhesion of the coating/ink to the substrate, as taught by both Grant et al (column 3, lines 50-58) and Kodas et al (page 30 to 31, section [0365]. De Voeght, Grant et al and Kodas et al are analogous art because they are from the same field of endeavor that is the art of ink jet ink composition to be printed via ink jet ink processes. Therefore the examiner deems that one of ordinary skill in the art at the time of the invention would have been motivated to pre-treat a substrate to be printed with an ink prior to printing, as suggest by Grant et al and Kodas et al.

Allowable Subject Matter

11. Claims 5-6 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art, while teach similar ink containing conductive functional material, the prior art fails to teach an ink composition as defined in the instantly claimed method comprising the limitations of claims 5-6 and 18.

13. Claim 19 is allowed.

14. The following is an examiner's statement of reasons for allowance: the prior art, alone or in combination, fails to teach and or fairly suggest a method for depositing an ink jet printable composition onto a substrate, wherein the composition comprising 1-60 wt% of the conductive materials found in instant claim 19 in a dispersion with 1 to 10 wt% of a polyvinyl pyrrolidone, wherein the dispersion has the defined particle sizes and wherein said ink composition further comprises a UV or thermally curable monomer.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sanza L McClendon/
Primary Examiner,
Art Unit 1796

SMc